

45

SEQUENCE LISTING

<110> HASHIMOTO, Koji  
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OTA, Yasuhiko

<120> DETECTION OF NUCLEIC ACID ASSOCIATED WITH DISEASE

<130> 220633US2SRDPCT

<140> US 10/070,415

<141> 2002-03-15

<150> PCT/JP02/02030

<151> 2002-03-05

<150> JP 2001-090053

<151> 2001-03-27

<150> JP 2001-284112

<151> 2001-09-18

<160> 72

<170> PatentIn version 3.1

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gagcctccgg agcaccttga tcctcagacg ggctgatga aacgagcatc tgattcagca      360
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aggtgcgggg ccaggagcta ggtttcgttt ctgctcccgg agccgccctc agcacagggt      480
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ctgtgagttt catttcttcg ccggcgcggg gcggggctgg gcgcgggggtg aaagaggcga      540
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 ctgcagccat tggcacacaa tgcctgggag tccctgctgg tgctgggatc atcccagtga 180  
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 <223> n is any nucleotide selected from a, g, c, or t

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 ctgcagccat tggcacacaa tgcctgggag tccctgctgg tgctgggatc atcccagtga 180  
 gccctgggag ggaactgaag accccaatt accaatgcat ctgttttcaa aaccgacggg 240  
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ggcctccgct ctgccttcgc ct 22

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ctgcagccat tggcacacaa tgcctgggag tccctgctgg tgctgggatc atcccagtga      180
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aggtgcgggg ccaggagcta ggtttcgttt ctgcncccg agccgccctc agcacagggt      480
ctgtgagttt catttcttcg ccggcgcggg gcggggctgg gcgcgggggtg aaagaggcga      540
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<210> 38
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<220>
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ctgcagccat tggcacacaa tgcctgggag tccctgctgg tgctgggatc atcccagtga      180
gccctgggag ggaactgaag accccaatt accaatgcat ctgttttcaa aaccgacggg      240
gggaaggaca tgcctaggtt caaggatacg tgcaggcttg gatgactccg ggccattagg      300
gagcctccgg agcaccttga tcctcagacg ggctgatga aacgagcatc tgattcagca      360
ggcctgggtt cgggcccag aacctgcgtc tcccgcgagt tcccgcgagg caagtgctgg      420
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ctgtgagttt catttcttcg ccggcgcggg gcggggctgg gcgcgggggtg aaagaggcga      540
accgagagcg gaggccgcac tccagcactg cgcagggacc g                          581

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<223> n is a nucleotide selected from a, g, c, or t

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 cctctttgga tcaccagctt tcagctcagg gcctgccaat gagtaaata tagttaacag 240  
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tcctgttcct tcaaaggaag atacccaaat ttgctttctg acccagtgcc ctcagccctc     1800
tc                                                                    1802

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<210> 43
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (868)..(868)
<223> n is a nucleotide selected from a, g, c, or t

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<220>  
 <221> misc\_feature  
 <222> (875)..(875)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 43  
 gaattcctgc cagaaagtag agaggtatatt agcactctgc cagggccaac gtagtaagaa 60  
 atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120  
 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtcttgaggg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
 ccacagaaag catgtttata gtcttcacgc agcaacgcc ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tactttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcatgctng gtaaatatgt 660  
 gttcattaac tgagattaac cttccctgag ttttctcaca ccaagggtgag gaccatgtcc 720  
 ctgtttccat cactccctct ccttctcctg agtatgggtgg cagcgtctta ctcagaaact 780  
 gtgacctgtg aggatgcccc aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggngt gatgncacca aggnagaaaa gggggaacca 900  
 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
 gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa 1020  
 acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080  
 aggaaagtgg cccacaggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg 1140  
 ggtcattgtc atgtcagacc cctattcact tcagtaggga tggcaccagg ttcaagaggc 1200  
 caaagaagag atggagtcag caaacaaca taggttttac tgggggaatc tgtttacagg 1260

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gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320
ttaattttca ctttgcaccc tccctgcagc aacctccacg tggcaacttt atttcttaag 1380
ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc 1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga 1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac 1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac ccagcaagg 1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgccccttc 1740
tcctgttcct tcaaaggaag atacccaaat ttgctttctg acccagtgcc ctgagccctc 1800
tc 1802

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<210> 44
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (868)..(868)
<223> n is a nucleotide selected from a, g, c, or t

```

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<220>
<221> misc_feature
<222> (875)..(875)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (884)..(884)
<223> n is a nucleotide selected from a, g, c, or t

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<400> 44

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gaattcctgc	cagaaagtag	agaggtat	agcactctgc	cagggccaac	gtagtaagaa	60
atttccagag	aaaatgctta	cccaggcaag	cctgtntaaa	acaccaaggg	gaagcaaact	120
ccagttaatt	ctgggctggg	ttggtgacta	aggttgaggt	tgatctgagg	ttgagacctt	180
cctcttttga	tcaccagctt	tcagctcagg	gcctgccaat	gagtaaata	tagttaacag	240
gtcctggagg	ggaatcagct	gcccagatac	aaagatggga	ttcaggtggc	agatggaccc	300
gaagaggaca	tggagagaaa	gaggaagctc	ctacagacac	ctgggtttcc	actcattctc	360
attccctaag	ctaacaggca	taagccagct	ggcaatgcac	gggtccattt	gttctcactg	420
ccactgaaag	catgtttata	gtcttccagc	agcaacgcca	gggtgtctagg	cacagatgaa	480
cccctcctta	ggatccccac	tgctcatcat	agtgcctacc	tttgttaaag	tactagtcac	540
gcagtgtcac	aaggaatgtt	tacttttcca	aatccccagc	tagaggccag	ggatgggtca	600
tctattttcta	tatagcctgc	accagattg	taggacagag	ggcatgctng	gtaaatatgt	660
gttcattaac	tgagattaac	cttccctgag	ttttctcaca	ccaaggtgag	gaccatgtcc	720
ctgtttccat	cactccctct	ccttctcctg	agtatgggtg	cagcgtctta	ctcagaaact	780
gtgacctgtg	aggatgcca	aaagacctgc	cctgcagtga	ttgcctgtag	ctctccaggc	840
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ggtagctgtt	gggctgttct	gtctctgcaa	ttctttacct	tccagaggaa	actgcctggg	960
gatatgagga	gactgatgtc	ctatttgagt	atatttttct	caactatact	gtaactcaaa	1020
acagagattc	agctcgaatt	ccacacagca	gtttgtgact	aatagttgtc	ttgccagccc	1080
aggaaagtgg	cccacaggtc	aggccatccc	gtgggacaca	ggatgaattt	ttcttctctg	1140
ggtcattgtc	atgtcagacc	cctattcact	tcagtaggga	tggcaccagg	ttcaagaggc	1200
caaagaagag	atggagtcag	caaacaaaca	taggtttttac	tgggggaatc	tgtttacagg	1260
gagatccagc	agcagtgggc	tggacaggag	aacaacaact	actggtaaaa	acaaatgcag	1320
ttaattttca	ctttgcaccc	tccttcagc	aacctccacg	tggcaacttt	atttcttaag	1380
ttattgctct	caggtgcaca	ccatacagtt	attgagagca	gtgctcagaa	aggtcagtcc	1440
tgggtcaagg	tctcccttct	cctgagaagg	gattgggcat	caaactcttg	aagagagaga	1500
gcaagaacat	agatattaag	tcacatttcc	tttgtcttcc	aacaggccaa	gggctcagag	1560
gcttacaggg	ccccctgga	aagttggggc	ctccaggaaa	tccagggcct	tctgggtcac	1620
caggaccaa	gggccaaaaa	ggagaccctg	gaaaaagtcc	gggtaaggac	cccagcaagg	1680
tctgagctga	cttcacccag	ggttctgaga	ccttgagtat	ctggtaagag	gtgccccttc	1740

tctgttcct tcaaaggaag atacccaaat ttgctttctg acccagtgcc ctcagccctc 1800  
tc 1802

<210> 45  
<211> 1802  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (96)..(96)  
<223> n is a nucleotide selected from a, g, c, or t

<220>  
<221> misc\_feature  
<222> (649)..(649)  
<223> n is a nucleotide selected from a, g, c, or t

<220>  
<221> misc\_feature  
<222> (868)..(868)  
<223> n is a nucleotide selected from a, g, c, or t

<220>  
<221> misc\_feature  
<222> (884)..(884)  
<223> n is a nucleotide selected from a, g, c, or t

<220>  
<221> misc\_feature  
<222> (425)..(425)  
<223> n is a nucleotide selected from a, g, c, or t

<400> 45  
gaattcctgc cagaaagtag agaggtatatt agcactctgc cagggccaac gtagtaagaa 60  
atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120  
ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
cctctttgga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
gtcctggagg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc 300  
gaagaggaca tggagagaaa gaggaagctc ctacagacac ctggggtttcc actcattctc 360  
attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
ccacngaaag catgtttata gtcttcagc agcaacgcca ggtgtctagg cacagatgaa 480

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ccccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac      540
gcagtgtcac aaggaatggt tactttttcca aatccccagc tagaggccag ggatgggtca      600
tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt      660
gttcattaac tgagattaac cttccctgag ttttctcaca ccaagggtgag gaccatgtcc      720
ctgtttccat cactccctct ccttctcctg agtatgggtgg cagcgtctta ctcagaaact      780
gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc      840
atcaacggct tcccaggcaa agatgggngt gatggcacca aggnagaaaaa gggggaacca      900
ggtacgtggt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg      960
gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa    1020
acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc    1080
aggaaagtgg cccacaggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg    1140
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caaagaagag atggagtcag caaacaaca taggtttttac tgggggaatc tgtttacagg    1260
gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag    1320
ttaattttca ctttgcaccc tccctgcagc aacctccacg tggcaacttt atttcttaag    1380
ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc    1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga    1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag    1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac    1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac ccagcaagg    1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgccccttc    1740
tcctgttct tcaaaggaag atacccaaat ttgctttctg acccagtgcc ctcagccctc    1800
tc                                                                    1802

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<210> 46
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>  
 <221> misc\_feature  
 <222> (425)..(425)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (649)..(649)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (868)..(868)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 46  
 gaattcctgc cagaaagtag agaggtatth agcactctgc cagggccaac gtagtaagaa 60  
 atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggga gaagcaaact 120  
 ccagttaatt ctgggctggg ttgggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtctctggagg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatth gttctcactg 420  
 ccacngaaag catgtttata gtcttcacgc agcaacgcca ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgccctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tactttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt 660  
 gttcattaac tgagattaac cttccctgag ttttctcaca ccaagggtgag gaccatgtcc 720  
 ctgtttccat cactccctct ctttctctg agtatggtgg cagcgtctta ctcaaaaact 780  
 gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggngt gatgacacca aggnagaaaa gggggaacca 900

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ggtaacgtggtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg      960
gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa    1020
acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc    1080
aggaaagtgg cccacaggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg    1140
ggtcattgtc atgtcagacc cctattcact tcagtaggga tggcaccagg ttcaagaggc    1200
caaagaagag atggagtcag caaacaacaa taggtttttac tgggggaatc tgtttacagg    1260
gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag    1320
ttaattttca ctttgcaccc tccttcgagc aacctccacg tggcaacttt atttcttaag    1380
ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc    1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga    1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag    1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac    1620
caggaccaaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac ccagcaagg    1680
tctgagctga cttcacccag ggttctgaga ccttgagtat ctggtaagag gtgccccttc    1740
tcctgttcct tcaaaggaag atacccaaat ttgctttctg acccagtgcc ctcagccctc    1800
tc                                                                    1802

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<210> 47
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (425)..(425)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

```

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<220>

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<221> misc\_feature  
 <222> (868)..(868)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 47  
 gaattcctgc cagaaagtag agaggtatatt agcactctgc cagggccaac gtagtaagaa 60  
 atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120  
 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaata tagttaacag 240  
 gtctctggagg ggaatcagct gccagatac aaagatggga ttcaggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccattt gttctcactg 420  
 ccacngaaag catgtttata gtcttcagc agcaacgcc ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgccctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tacttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaataatgt 660  
 gttcattaac tgagattaac cttccctgag tttcttcaca ccaaggtgag gaccatgtcc 720  
 ctgtttccat cactccctct ctttctcctg agtatgggtg cagcgtctta ctcagaaact 780  
 gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggngt gatgccacca aggnagaaaa gggggaacca 900  
 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
 gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa 1020  
 acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080  
 aggaaagtgg cccacaggctc aggccatccc gtgggacaca ggatgaattt ttcttctctg 1140  
 ggtcattgtc atgtcagacc cctatttact tcagtaggga tggcaccagg ttcaagaggc 1200  
 caaagaagag atggagtcag caaacaaca taggttttac tgggggaatc tgtttacagg 1260  
 gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320  
 ttaattttca ctttgcaccc tccctgcagc aacctccagc tggcaacttt atttcttaag 1380

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ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtc 1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga 1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac 1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggttaaggac ccagcaagg 1680
tctctgagct gacttcaccc agggttctga gaccttgagt atctggtaag aggtgccct 1740
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tc 1802

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<210> 48
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (425)..(425)
<223> n is a nucleotide selected from a, g, c, or t

```

```

<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

```

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<220>
<221> misc_feature
<222> (868)..(868)
<223> n is a nucleotide selected from a, g, c, or t

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```

<220>
<221> misc_feature
<222> (884)..(884)
<223> n is a nucleotide selected from a, g, c, or t

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<400> 48
gaattcctgc cagaaagtag agaggtattht agcactctgc cagggccaac gtagtaagaa 60
atttcagag aaaatgctta ccagggcaag cctgtntaaa acaccaaggg gaagcaaact 120

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ccagttaatt	ctgggctggg	ttggtgacta	aggttgaggt	tgatctgagg	ttgagacctt	180
cctcttttga	tcaccagctt	tcagctcagg	gcctgccaat	gagtaaatga	tagttaacag	240
gtcctggagg	ggaatcagct	gcccagatac	aaagatggga	ttcaggtggc	agatggagccc	300
gaagaggaca	tggagagaaa	gaggaagctc	ctacagacac	ctgggtttcc	actcattctc	360
attccctaag	ctaacaggca	taagccagct	ggcaatgcac	ggccccattt	gttctcactg	420
ccacngaaag	catgtttata	gtcttcacgc	agcaacgcca	gggtgtctagg	cacagatgaa	480
ccccctctta	ggatccccac	tgctcatcat	agtgcctacc	tttgttaaag	tactagtcac	540
gcagtgtcac	aaggaatgtt	tactttttcca	aatccccagc	tagaggccag	ggatgggtca	600
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gttcattaac	tgagattaac	cttccttgag	ttttctcaca	ccaaggtgag	gaccatgtcc	720
ctgtttccat	cactccctct	ccttctcctg	agtatgggtg	cagcgtctta	ctcagaaaact	780
gtgacctgtg	aggatgcccc	aaagacctgc	cctgcagtga	ttgcctgtag	ctctccaggc	840
atcaacggct	tcccaggcaa	agatggngt	gatgtcacca	aggnagaaaa	gggggaacca	900
ggtaoagtgt	gggctgttct	gtctctgcaa	ttctttacct	tccagaggaa	actgcctggg	960
gatatgagga	gactgatgtc	ctatttgagt	atatttttct	caactatact	gtaactcaaa	1020
acagagattc	agctcgaatt	ccacacagca	gtttgtgact	aatagttgtc	ttgccagccc	1080
aggaaagtgg	cccacaggtc	aggccatccc	gtgggacaca	ggatgaattt	ttcttctctg	1140
ggtcattgtc	atgtcagacc	cctattcact	tcagtaggga	tggcaccagg	ttcaagaggc	1200
caaagaagag	atggagtcag	caaacaaaca	taggttttac	tgggggaatc	tgtttacagg	1260
gagatccagc	agcagtgggc	tggacaggag	aacaacaact	actggtaaaa	acaaatgcag	1320
ttaattttca	ctttgcaccc	tccttcagc	aacctccacg	tggcaacttt	atttcttaag	1380
ttattgctct	caggtgcaca	ccatacagtt	attgagagca	gtgctcagaa	aggtcagtcc	1440
tgggtcaagg	tctcccttct	cctgagaagg	gattgggcat	caaactcttg	aagagagaga	1500
gcaagaacat	agatattaag	tcacatttcc	tttgtcttcc	aacaggccaa	gggctcagag	1560
gcttacaggg	cccccttga	aagttggggc	ctccaggaaa	tccagggcct	tctgggtcac	1620
caggaccaa	gggccaacaa	ggagaccctg	gaaaaagtcc	gggtaaggac	cccagcaagg	1680
tctgagctga	cttcacccag	ggttctgaga	ccttgagtat	ctggtaagag	gtgccccttc	1740
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<210> 49  
 <211> 1802  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (425)..(425)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (649)..(649)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (875)..(875)  
 <223> n is a nucleotide selected from a, g, c, or t

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 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtcttgagg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
 ccacngaaag catgtttata gtcttcagc agcaacgcc ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgccctacc tttgttaaag tactagtcac 540

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gcagtgtcac aaggaatgtt tactttttcca aatccccagc tagaggccag ggatgggtca 600
tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt 660
gttcattaac tgagattaac cttccctgag tttttctaca ccaagggtgag gaccatgtcc 720
ctgttttccat cactccctct ctttctcctg agtatgggtg cagcgtctta ctcagaaact 780
gtgacctgtg aggatgcccc aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840
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ggtagctgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960
gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa 1020
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gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320
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ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc 1440
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gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac 1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac cccagcaagg 1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgcccttc 1740
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tc 1802

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<210> 50
<211> 1802
<212> DNA
<213> Homo sapiens

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<223> n is a nucleotide selected from a, g, c, or t

<220>

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 <222> (649)..(649)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (875)..(875)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (425)..(425)  
 <223> n is a nucleotide selected from a, g, c, or t

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 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtctctggagg ggaatcagct gccagatac aaagatggga ttcaggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
 ccacngaaag catgtttata gtcttcacgc agcaacgcca ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tacttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt 660  
 gttcattaac tgagattaac cttccctgag ttttctcaca ccaagggtgag gaccatgtcc 720  
 ctgtttccat cactccctct cttctcctg agtatgggtgg cagcgtctta ctcagaaact 780  
 gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggtgt gatgncacca aggnagaaaa gggggaacca 900  
 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
 gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa 1020

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acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080
aggaaagtgg cccacagggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg 1140
ggtcattgtc atgtcagacc cctattcact tcagtaggga tggcaccagg ttcaagaggc 1200
caaagaagag atggagtcag caaacaaca taggttttac tgggggaatc tgtttacagg 1260
gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320
ttaattttca ctttgcaccc tccctgcagc aacctccacg tggcaacttt atttcttaag 1380
ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc 1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga 1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac 1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac ccagcaagg 1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgcccttc 1740
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tc 1802

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<210> 51
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
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<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (425)..(425)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (875)..(875)
<223> n is a nucleotide selected from a, g, c, or t

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<220>  
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 <222> (884)..(884)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 51  
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 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtccctggagg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatth gttctcactg 420  
 ccacngaaag catgtttata gtcttccagc agcaacgcc a ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgccctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tactttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt 660  
 gttcattaac tgagattaac ctcccttgag ttttctcaca ccaagggtgag gaccatgtcc 720  
 ctgtttccat cactccctct ctttctctg agtatgggtg cagcgtctta ctcaaaaact 780  
 gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggagt gatgncacca aggnagaaaa gggggaacca 900  
 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
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 acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080  
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 ggtcattgtc atgtcagacc cctattcact tcagtaggga tggcaccagg ttcaagaggc 1200  
 caaagaagag atggagtcag caaacaacaa taggtttttac tgggggaatc tgtttacagg 1260  
 gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320  
 ttaattttca ctttgcaccc tccctgcagc aacctccagc tggcaacttt atttcttaag 1380  
 ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtc 1440

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tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga 1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
gcttacaggg cccccctgga aagttggggc ctccaggaaa tccagggcct tctgggtcac 1620
caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac cccagcaagg 1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgccccttc 1740
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tc 1802

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<210> 52
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
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<222> (425)..(425)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
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<222> (875)..(875)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
<221> misc_feature
<222> (884)..(884)
<223> n is a nucleotide selected from a, g, c, or t

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atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120
ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180

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cctcttttga	tcaccagctt	tcagctcagg	gcctgccaat	gagtaaata	tagttaacag	240
gtcctggagg	ggaatcagct	gccagatac	aaagatggga	ttcagggtggc	agatggaccc	300
gaagaggaca	tggagagaaa	gaggaagctc	ctacagacac	ctgggtttcc	actcattctc	360
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ccacngaaag	catgtttata	gtcttcacg	agcaacgcc	ggtgtctagg	cacagatgaa	480
ccctcctta	ggatccccac	tgctcatcat	agtgcctacc	tttgttaaag	tactagtcac	540
gcagtgtcac	aaggaatgtt	tacttttcca	aatccccagc	tagaggccag	ggatgggtca	600
tctatttcta	tatagcctgc	accagattg	taggacagag	ggcatgctng	gtaaatatgt	660
gttcattaac	tgagattaac	cttccctgag	ttttctcaca	ccaagggtgag	gaccatgtcc	720
ctgtttccat	cactccctct	ccttctcctg	agtatgggtg	cagcgtctta	ctcagaaact	780
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atcaacggct	tcccaggcaa	agatgggggt	gatgncacca	aggnagaaaa	gggggaacca	900
ggtacgtgtt	gggctgttct	gtctctgcaa	ttctttacct	tccagaggaa	actgcctggg	960
gatatgagga	gactgatgtc	ctatttgagt	atatttttct	caactatact	gtaactcaaa	1020
acagagattc	agctcgaatt	ccacacagca	gtttgtgact	aatagttgtc	ttgccagccc	1080
aggaaagtgg	cccacaggtc	aggccatccc	gtgggacaca	ggatgaattt	ttcttctctg	1140
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tctgagctga	cttcaccag	ggttctgaga	ccttgagtat	ctggtaagag	gtgccccttc	1740
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tc						1802

<210> 53  
 <211> 1802  
 <212> DNA  
 <213> Homo sapiens  
  
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 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (425)..(425)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (868)..(868)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (875)..(875)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 53  
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 atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120  
 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaatga tagttaacag 240  
 gtctctggagg ggaatcagct gccagatac aaagatggga ttcaggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctggggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccattt gttctcactg 420  
 ccacngaaag catgtttata gtcttccagc agcaacgcca ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tacttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctatttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt 660



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gttcattaac tgagattaac cttccctgag ttttctcaca ccaaggtgag gaccatgtcc 720
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caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac cccagcaagg 1680
tctgagctga cttcaccacg ggttctgaga ccttgagtat ctggtaagag gtgccccttc 1740
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tc 1802

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<210> 54
<211> 1802
<212> DNA
<213> Homo sapiens

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<220>
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<222> (96)..(96)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
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<223> n is a nucleotide selected from a, g, c, or t

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<220>  
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 <222> (425)..(425)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
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 <222> (868)..(868)  
 <223> n is a nucleotide selected from a, g, c, or t

<220>  
 <221> misc\_feature  
 <222> (875)..(875)  
 <223> n is a nucleotide selected from a, g, c, or t

<400> 54  
 gaattcctgc cagaaagtag agaggtatatt agcactctgc cagggccaac gtagtaagaa 60  
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 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaata tagttaacag 240  
 gtcttgagg ggaatcagct gccagatac aaagatggga ttcaggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
 ccacngaaag catgtttata gtcttcacgc agcaacgcca ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatgtt tacttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaataatgt 660  
 gttcattaac tgagattaac cttccctgag ttttctcaca ccaaggtgag gaccatgtcc 720  
 ctgtttccat cactccctct ctttctctg agtatggtgg cagcgtctta ctcagaaact 780  
 gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc 840  
 atcaacggct tcccaggcaa agatgggngt gatgncacca aggaagaaaa gggggaacca 900  
 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
 gatatgagga gactgatgtc ctatttgagt atatttttct caactatact gtaactcaaa 1020  
 acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080

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aggaaagtgg cccacaggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg 1140
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ttattgctct cagggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc 1440
tgggtcaagg tctcccttct cctgagaagg gattgggcat caaactcttg aagagagaga 1500
gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag 1560
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caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac cccagcaagg 1680
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<210> 55
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<212> DNA
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<220>
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<222> (425)..(425)
<223> n is a nucleotide selected from a, g, c, or t

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<220>
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<222> (649)..(649)
<223> n is a nucleotide selected from a, g, c, or t

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<223> n is a nucleotide selected from a, g, c, or t

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 <223> n is a nucleotide selected from a, g, c, or t

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 ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt 180  
 cctcttttga tcaccagctt tcagctcagg gcctgccaat gagtaaata tagttaacag 240  
 gtcttgagg ggaatcagct gccagatac aaagatggga ttcaggtggc agatggaccc 300  
 gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc 360  
 attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccatatt gttctcactg 420  
 ccacngaaag catgtttata gtcttcagc agcaacgcca ggtgtctagg cacagatgaa 480  
 cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac 540  
 gcagtgtcac aaggaatggt tacttttcca aatccccagc tagaggccag ggatgggtca 600  
 tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaataatgt 660  
 gttcattaac tgagattaac cttccctgag ttttctcaca ccaaggtgag gaccatgtcc 720  
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 ggtacgtgtt gggctgttct gtctctgcaa ttctttacct tccagaggaa actgcctggg 960  
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 acagagattc agctcgaatt ccacacagca gtttgtgact aatagttgtc ttgccagccc 1080  
 aggaaagtgg cccacaggtc aggccatccc gtgggacaca ggatgaattt ttcttctctg 1140  
 ggtcattgtc atgtcagacc cctattcact tcagtaggga tggcaccagg ttcaagaggc 1200  
 caaagaagag atggagtcag caaacaaca taggttttac tgggggaatc tgtttacagg 1260  
 gagatccagc agcagtgggc tggacaggag aacaacaact actggtaaaa acaaatgcag 1320  
 ttaattttca ctttgcaccc tccctgcagc aacctccagc tggcaacttt atttcttaag 1380

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ttattgctct caggtgcaca ccatacagtt attgagagca gtgctcagaa aggtcagtcc 1440
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caggaccaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac cccagcaagg 1680
tctgagctga cttcaccag ggttctgaga ccttgagtat ctggtaagag gtgccccttc 1740
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<210> 56
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<220>
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<223> n is a nucleotide selected from a, g, c, or t

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<223> n is a nucleotide selected from a, g, c, or t

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<220>
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<223> n is a nucleotide selected from a, g, c, or t

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atttccagag aaaatgctta cccaggcaag cctgtntaaa acaccaaggg gaagcaaact 120

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ccagttaatt ctgggctggg ttggtgacta aggttgaggt tgatctgagg ttgagacctt	180
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gtcctggagg ggaatcagct gccagatac aaagatggga ttcagggtggc agatggaccc	300
gaagaggaca tggagagaaa gaggaagctc ctacagacac ctgggtttcc actcattctc	360
attccctaag ctaacaggca taagccagct ggcaatgcac ggtcccattt gttctcactg	420
ccacngaaag catgtttata gtcttcagc agcaacgcca ggtgtctagg cacagatgaa	480
cccctcctta ggatccccac tgctcatcat agtgcctacc tttgttaaag tactagtcac	540
gcagtgtcac aaggaatgtt tacttttcca aatccccagc tagaggccag ggatgggtca	600
tctattttcta tatagcctgc acccagattg taggacagag ggcattgctng gtaaatatgt	660
gttcattaac tgagattaac cttccctgag ttttctcaca ccaagggtgag gaccatgtcc	720
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gtgacctgtg aggatgcca aaagacctgc cctgcagtga ttgcctgtag ctctccaggc	840
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gcaagaacat agatattaag tcacatttcc tttgtcttcc aacaggccaa gggctcagag	1560
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caggacaaaa gggccaaaaa ggagaccctg gaaaaagtcc gggtaaggac ccagcaagg	1680
tctgagctga cttcaccagc ggttctgaga ccttgagtat ctggtaagag gtgccccttc	1740
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tc

1802

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<400> 57  
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<210> 58  
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<210> 59  
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<400> 59  
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18

<210> 60  
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<400> 60  
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<210> 61  
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<220>  
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<400> 61  
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18

<210> 62  
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<400> 62  
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<210> 63  
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<400> 63  
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<210> 64  
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<400> 65  
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18

<210> 66  
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<400> 66  
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18

<210> 67  
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<212> DNA  
<213> Homo sapiens

<400> 69  
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<210> 70  
<211> 30  
<212> DNA  
<213> Homo sapiens

<400> 70  
tgcgcagtgc tggagtgcgg cctccgctct 30

<210> 71  
<211> 19  
<212> DNA  
<213> Homo sapiens

<400> 71  
cctgtgagga actactgtc 19

<210> 72  
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<213> Homo sapiens

<400> 72

ggtgcacggt ctacgagacc

20